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BEFORE THE BOARD OF PATENT APPEALS

AND INTERFERENCES

Application Number: 10/624,808

Filing Date: July 22, 2003

Appellant(s): BAILEY ET AL.

Derek P. Martin #36595

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 5/25/2008 appealing from the Office action mailed 5/8/2008.

(1) Real Party in interest

A statement identifying by name the real party interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US Pub 2003/0084030	Day et al	1-2003
US Pub 2002/0112102	Tarui et al	8-2002
US Pub 2003/0163641	Kaneko et al	8-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made

to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 9 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Day et al (US Pub 2003/0084030) in view of Tarui et al (US Pub 2002/0112102) and further in view of Kaneko (US Pub 2003/0163641).

As in claim 9, Day discloses a computer-implemented method for reconfiguring an identified I/O Input/Output (I/O) resource in a computer system that includes a plurality of logical partitions managed by a partition manager executing separately from the plurality of logical partitions (Day's Fig 2, 206B 205B hypervisor partitions, 203 203 hypervisor management code and low-level based hyper visor code PLIC, paragraph 37; The partition manager can dynamically reconfiguring resources among logical partitions, see paragraphs 7 and 41 and 26; Examiner note: the identified I/O input/output resource can be viewed as an I/O resource being identified for changing/reassigning per Appellant's remarks filed12/26/2007), the plurality of logical partitions comprising at least one logical partition that owns the identified I/O resource and at least one logical partition that does not own the identified I/O resource (Reassign an identified resource dynamically in a pool comprises of moving the identified resource from current logical partitions (partitions that currently accesses/owns the identified resource) to other logical partitions (partitions that currently do not access/do not owns

the identified resource), see paragraphs 41 and 44), the method comprising the steps of:

(1) the partition manager detecting a hardware state in the computer system that requires reconfiguration of the identified I/O resources (The hypervisor comprises state data to enforcing the configuration/allocation of resources to partitions, paragraph 37);

Day does not expressly disclose the details associating with the remaining claimed steps. However, Tarui discloses,

(2) the partition manager suspending the at least one of logical partitions by inhibiting dispatching of tasks to the at least one of logical partition (Tarui's paragraph 84, the partition control program instructs the OS of the current partition to stop using the identified resource, By stopping the I/O tasks of the current partition, the identified resource, I/O adapter, is allowed to be disconnected from the current partition) and waiting until all pending tasks in the at least one of logical partitions are complete (Tarui's Fig 1 101, pending tasks in logical partition are flushed by the I/O adapter circuitry until it completed, when no more pending I/O requests and byte counter value is zero, see paragraphs 65,67 and 84);

(3) the partition manager reconfiguring the identified I/O resource (the identifier I/O resource is reconfigured to another partition, paragraph 84);

(4) the partition manager resuming one of the plurality of logical partitions by enable dispatching of tasks to all of the plurality of logical partitions (Tarui's paragraphs 83 and 84, after reconfiguring the identified I/O resources, naturally the system is resumed and tasks are distributed to appropriate logical partitions);

It would have been obvious to one of ordinary skill in the art at the time of invention to include the partition control program and associating logic as suggested by Tarui in Day's system thereby the reconfiguration I/O resource can be done dynamically in an efficient manner (Tarui's paragraph 84).

Day and Tarui do not expressly disclose the claim's aspect of suspending/resuming **all** of the plurality of the logical partitions. However, Kaneko's paragraph 31 discloses a storage subsystem with I/O resources being logically partitioned and assigned to different users. Kaneko further discloses an I/O reconfiguration mechanism including **all** of the logical partitions being suspended, the I/O reconfiguration reconfigures the identified I/O resource by inhibiting dispatch of tasks to **all** of the plurality of logical partitions (Kaneko's paragraph 32, the whole system is switched to a disconnect standby mode), and waiting until **all** pending tasks in all of the plurality of logical partitions are completed (Kaneko's paragraph 32 lines 13-14, when the requests from the host have been completed processed), and resumes **all** of the plurality of logical partitions by enable dispatching of tasks to **all** of the plurality of logical partition (Kaneko's paragraph 33, when there is no more requests from the host, the logical partitioning/configuring/changing is carried out, and when this step is completed, the system resume to executing all suspended requests and other new dispatching requests). Kaneko's paragraph 24 further teaches the logical partitioning of resources can be done in a dynamically manner. It would have been obvious to one skill of the art at the time of invention to include the logical partitioning mechanism as

suggested by Kaneko into Day's system modified by Tarui, thereby the reconfiguration of i/o resources can be done easily in a dynamically manner (Kaneko's paragraph 24).

As in claim 23, Day discloses a computer-implemented method for rebalancing input/output (I/O) loop (a pool of resources) in a computer system that includes a plurality of logical partitions managed by a partition manager executing separately from the plurality of logical partitions (Day's Fig 2, 206B 205B hypervisor partitions, 203 203 hypervisor management code and low-level based hyper visor code PLIC, paragraph 37; The partition manager can dynamically reconfiguring resources among logical partitions, see paragraphs 7 and 41 and 26; Day further teaches rebalancing a pool of resources among logical partitions, paragraphs 44,47 and 48), the method comprising the steps of:

(1) detecting when the I/O loop is unbalanced (Day's paragraph 47, proper allocation of resource requires detecting when unbalancing happens);

Day does not expressly disclose the details associating with the remaining claimed steps. However, Tarui discloses,

(2) quiescent I/O resources in the I/O loop (Tarui's paragraph 84, partition program instructs the OS of the current partition to stop using the I/O resource, so that the I/O resource can be quiescent/disconnected);

(3) determining which of the plurality of logical partitions own the I/O resources in the I/O loop (Tarui's paragraph 84, the current partition (owner of the I/O resource) is determined and instructing the current partition to stop using the I/O resource);

(4) suspending the logical partitions determined in step (3) (Tarui's paragraph 84, the current partition is prohibit from further using the I/O resource);

(5) rebalancing the I/O loop by allocating at least one I/O resource in the I/O loop from a first logical partition to a second logical partition (Tarui's paragraph 84, switching the I/O resource from current partition to another partition);

(6) enabling the I/O resources in the I/O loop after rebalancing in step (5) (Tarui's paragraph 84, enabling the I/O resource for the partition); and

(7) resuming the logical partitions suspended in step (4) (Tarui's paragraph 84, the system is resumed).

It would have been obvious to one of ordinary skill in the art at the time of invention to include the partition control program and associating logic as suggested by Tarui in Day's system thereby the reconfiguration I/O resource can be done dynamically in an efficient manner (Tarui's paragraph 84).

Regarding the claim's aspect of an Input/Output **loop**. Day teaches the concept of balancing of resources, by putting resources into a pool, and resources in the pool can be divided to plurality of partitions in allocation units in a balancing manner (Day's paragraphs 44, 47 and 48). Day further discloses the resources can be any resources in the system (processors, I/O resources, paragraph 37). Day and Tarui do not explicitly mention the claimed "the Input/Output **loop**". However Kaneko discloses a storage subsystem with I/O resources that are arranged including I/O physical resources (Kaneko Fig 2, 11, 12,13, and 14) and wherein the physical I/O resources (Fig 2, 211 to 214, 221 to 224, 231 to 234 etc array of disks and including Fig 2 11 to 14) are

organized into I/O loops (Examiner note: the I/O loop can be interpreted as a group of I/O resources, and the I/O resources in the group/loop can be assigned and make available to different users/partitions (Kaneko's paragraph 31). It would have been obvious to one skill of the art at the time of invention to include the organizing the physical I/O resources into group/loop of I/O resources as taught by Kaneko into Day's system modified by Tarui, and thereby the physical I/O resources in the group/loop can be assigned to different users can be done easily in a dynamically manner (Kaneko's paragraph 24).

(10) Response to Argument

Appellant's arguments in response to the last office action has been fully considered but they are not persuasive. Examiner respectfully traverses Appellant's arguments for the following reasons:

A) With regarding to Appellant's arguments for the rejection of claim 9.

Appellant argues at pages 6 to page 10 that the recited prior arts do not disclose the claims' aspect of suspends/resume all of the plurality of the logical partitions, as follows,

"The examiner also cites paragraph 32 of Kaneko as teaching 'all of the logical partitions are suspended'. Kaneko states, 'As seen in the flowcharts, the whole system is switched to a disconnection standby mode (step 31).' Appellant respectfully asserts the suspension of all the logical partitions in Kaneko does not read on the suspension of all the logical partitions in claim 9. Claim 9 recites, 'suspending all of the plurality of

logical partitions...', but the plurality of logical partitions in claim 9 comprises 'at least one logical partition that owns the identified I/O resource and at least one logical partition that does not own the identified I/O resource.' Kaneko teaches that all of the logical partitions are suspended, but all of the logical partitions control the resources spoken of, Paragraph 28 states: Therefore, according to this embodiment, each disk array unit of the cluster disk subsystem can refer to or update (hereafter, referred to as access) the resources (specifically, the cache storage devices and common storage devices) of the other disk array units that constitute the cluster. Therefore, according to the language in Kaneko quoted above, all of the partitions have access to the resources in each of the other partitions. This means that even if all of the partitions are suspended, only the partitions that own the resources have been suspended, similar to the teaching in Tarui. Because each logical partition in Kaneko can access the shared resources in all the other logical partitions, Kaneko must stop all the logical partitions. However, stopping all the logical partitions in Kaneko only reads on stopping logical partitions that own I/O resources. Nowhere does any of Day, Tarui or Kaneko teach or suggest suspending all logical partitions, where some of the logical partitions do not own the identified I/O resource."

In response, Keneko clearly teaches that logical partitions not only can access common storage devices (paragraph 28) **but they can access disk devices, i.e disk array units that are logically and separately assigned to their partitions** (paragraph 32, "When the cluster disk subsystem formed of the four disk array units is logically partitioned so that the disk array unit numbered "3" is separated from the others as

shown in FIG. 1.."). **Because the I/O resources are divided/separated to different users, it can be seen that, for example, a first disk device is owned or assigned to a first user and this first disk is not owned or assigned to a second user** (paragraph 31, "this cluster disk subsystem is logically partitioned during the operation so that the cluster resulting from the division can be assigned to and used by different users. This logical partitioning is executed by ordering the cluster coupler 30 to separate the units by software as mentioned below ").

Appellant further argues, "In the Response to Arguments section of the pending office action, the examiner attempts to defend the rejection by stating the partition that owns the identified I/O resource is the current partition that is currently accessing the I/O resource, while other partitions that share the I/O resource but are not currently using the I/O resource do not own the I/O resource. This is inconsistent with the express teachings of Day and knowledge in the art. In rejecting part of the preamble of claim 9, the examiner states: **Examiner note: the identified I/O input/output resource can be viewed as an I/O resource being identified for changing/reassigning per Appellant's remarks filed 12/26/2007,** the plurality of logical partitions comprising at least one logical partition that owns the identified I/O resource and at least one logical partition that does not own the identified I/O resource (reassign an identified resource dynamically in a pool comprises of moving the identified resource from current logical partitions (partitions that currently accesses/owns the identified resource) to other logical partitions (partitions that currently do not access/do not own the identified resource), see paragraphs 41 and 44. Appellant did not file a response on 12/26/2007.

This is the date of an office action, not the date of a response. For this reason it is unclear to which of Appellant's remarks the examiner is referring. **It appears from the examiner's statements above the examiner equates use of a resource in a pool to ownership of that resource. This is inconsistent with the express teachings of Day and common knowledge in the art.** Day shows in FIG. 3 one set of processors 316 that are dedicated to a logical partition 304 and another set of processors 315 that are shared by logical partitions 301,302 and 303. The processors in set 316 could be said to be "owned" by logical partition 304, but the processors 315 are "owned" by all of the logical partitions 301,302 and 303. **Because the pool of processors 315 are shared by all the logical partitions 301,302 and 303, it is incorrect to state one of these "own" the resource by virtue of simply using the resource at a given point in time.** The examiner's rejection based on Tarui is inconsistent with the rejection based on Day".

In response, First, with regard to the Examiner's note **"** the identified I/O input/output resource can be viewed as an I/O resource being identified for changing/reassigning per Appellant's remarks filed 12/26/2007**",** the Examiner apologizes to the typographic error, the intention is to refer to the Application's remark at page 6, filed 3/26/2008 which states, "identified I/O resource as recited in the claims. Applicant's specification at p. 9 lines 15-20 states: An "I/O resource" in this context may be any hardware or software that may be independently allocated by partition manager 121 to one or more logical partitions. Examples of hardware I/O resources include processors, memory, hard disk drives, and I/O slots. Examples of software I/O

resources include a database, internal communications (such as a logical LAN), or applications (such as word processors, e-mail, etc.)". Thus based on above Appellant's remarks and specification's page 9 lines 15-20, the identified I/O input/output resource can be viewed as an I/O resource being identified for changing/reassigning purpose.

Second, with regarding to Appellant argument that the "it is incorrect to state one of these 'own' the resource by virtue of simply using the resource at a given point in time". Examiner disagrees. By the very nature that the resources **are assigned** to certain logical partitions which are taught Day's paragraphs 41 and 42. These **assignments** clearly imply the assigned logical partitions own the resources and thus the assigned logical partitions can proceed to access the resources assigned to them (Day's paragraph 41 and paragraph 42). In other words, the very nature of assignments implies the ownership of the resources. And therefore Day's assignments of resources implied the own resources as claimed.

In addition, Day clearly teaches the dedicate mode is functionally equivalent to a pool mode, wherein a resource is assigned to one logical partition or assigned to more than one partition (paragraph 44, "In a pooled mode, the processors are assigned to a pool, which is typically (although not necessarily) shared among more than one partition. Dedicated mode is functionally equivalent to a pool to which only one logical partition is assigned, and in which the full capacity and number of virtual processors of the pool are given to the one partition"). In other words, in dedicate mode and pool mode, the resource can be assigned/owned by one and more than one logical partition.

Therefore, Appellant's argument is not persuasive.

Appellant further argues, "In rejecting claim 9, the examiner alleged Day teaches these limitations, stating: 'the hypervisor comprises state data to enforcing [sic] the configuration/allocation of resources to partitions, paragraph 37.' The relevant portion of paragraph 37 of Day states: Hypervisor 202 contains state data, some of which may be stored in special purpose registers while other such state data is stored in tables or other structures. Essentially, this state data defines the allocation of resources in logical partitions, and the allocation is altered by changing the state data rather than by **physical reconfiguration of hardware.** Day does not teach the limitation in claim 9 quoted above because the state data in Day is not hardware state in the computer system that requires reconfiguration of the identified I/O resource. FIG. 2 of Day shows hardware and software in computer system 100 in Day. The hardware level 201 'represents the collection of physical devices (as opposed to data stored in devices), such as processors, memory, buses, I/O devices, etc., shown in FIG. 1, including other hardware not shown in FIG. 1.' Day at paragraph [0036]. The state data referenced in Day resides in the Hypervisor 202, and defines the allocation of resources in logical partitions. The examiner's rejection of the limitation in claim 9 quoted above fails because the state data in Hypervisor 202 in Day is not "hardware state in the computer system" as recited in claim 9. While the state data in Day reflects the current allocation of resources to logical partitions, a change in the state data does not require reconfiguration of an identified I/O resource as recited in claim 1. For the many reasons given above, Day does not teach all of the limitations in clause (1) in claim 9. As a result, the examiner's rejection of claim 9 under 35 U.S.C. § 103(a) is in error".

In responses, Appellant argument is confusing and misleading. Appellant alleges that Day's paragraph 37 teaching of state data, in table, data structures and special purpose registers are not hardware state in the computer system. Examiner submits that one ordinary skill in the art would understand that state data in table, data structures and special purpose registers represent hardware state in the computer system.

Appellant further alleges that "While the state data in Day reflects the current allocation of resources to logical partitions, a change in the state data does not require reconfiguration of an identified I/O resource as recited in claim 1...."; and

Appellant further argues at pages 10-11, " The examiner's reading of Tarui is incorrect. In Tarui, the partition-control program instructs the OS on the current partition to stop using the I/O adapter (step 6000). Tarui at paragraph [0084]. In claim 9, in contrast, the partition managers suspends the plurality of logical partitions by inhibiting dispatch of tasks to all of the logical partitions and waiting until all pending tasks in all of the plurality of logical partitions are complete. The examiner has shown no teaching in Tarui that reads on suspending a logical partition. **The fact that a logical partition stops using an I/O adapter does not mean the logical partition is suspended.** To the contrary, the logical partition may include numerous I/O adapters and other hardware resources. Stopping the logical partition from using an I/O adapter absolutely does not read on suspending a logical partition. In addition, Tarui does not teach or suggest suspending a logical partition *by inhibiting dispatch of tasks* to the logical partition as recited in claim 9. As a result, the examiner has failed to establish a prima

facie case of obviousness for claim 9 under 35 U.S.C. § 103(a). In Tarui, a logical partition that owns an I/O adapter is instructed to stop using the I/O adapter by the partition control program. See paragraph [0084] and step 6000 in FIG. 6 of Tarui. **There is absolutely no teaching whatsoever in Tarui of inhibiting dispatch of tasks to a logical partition.** The partition control program referred to in paragraph [0084] of Tarui, after instructing the OS on the current partition to stop using the I/O adapter, **could** still dispatch a number of different tasks to that partition as long as the dispatched tasks do not involve the I/O adapter."

Further, Appellant alleges that Tarui's "stopping using the I/O adapter " does not read on suspending a logical partition. Examiner disagrees. Tarui's paragraph 84 clearly teaches "The current partition to stop using the I/O adapter" so that the I/O adapter which representing I/O resources (or I/O devices which connect to "the I/O adapter connected to an external I/O network", see paragraph 47) to be reconfigured to partitions, for example reconfigured to another partition. Once the reconfiguring is accomplished, the system can be resumed ("The OS on the now-permitted partition starts to use the I/O adapter"). Moreover, "an I/O adapter is used" implies having an I/O request, i.e I/O task, which is directed to such I/O adapter. And consequently "an I/O adapter is not used" implies having an I/O request, i.e I/O task, which is not directed to such I/O adapter. **The directing of I/O request, i.e I/O task, to certain partition (i.e dispatching) is** known in the art and taught by Tarui as logic that schedules send/receive I/O requests to a certain partitions (paragraphs 49-50, "When the I/O adapter 100 performs data I/O processing for a plurality of partitions, a send

scheduler 140 and a receive scheduler 190 determine in what proportions the I/O adapter 100 should perform the data I/O processing for the partitions. A send/receive allocation register 150 regulates the allocation of I/O capacity among the partitions. A receive-side partition discriminator 160 determines which partition received data belongs to..."). And thus when the I/O requests not delivered to the current partition the current partition is in "stop using the I/O adapter state". The I/O requests must be stopped being delivered to the current partition, otherwise the I/O requests cannot be processed by the current partition and an error occurs. In fact, Tarui teaches buffering of some I/O requests and stop delivering more requests to the buffer, otherwise buffer will be overflowed, and these more requests cannot be processed, an error would be resulted (paragraph 72, "if the receiving buffer is full, the send scheduler 140 shifts to step 5106 to transmit data of the next partition"; Additionally, paragraph 68 further discloses of the "suspension request signal" to stop sending the requests).

Appellant further argues at page 13, "from many fatal errors. First, the examiner's assumption that the logical partition is resumed is built upon the earlier faulty assumption that it was suspended in the first place. Thus we see the examiner's rejection collapse under the weight of its faulty assumptions".

In response, Tarui teaches the claimed suspending and thus resuming as discussed in above paragraphs.

B) With regarding to Appellant's arguments for the rejection of claim 23, Appellant argues, "In the rejection of claim 23, the examiner states Day teaches the limitation '(1) detecting when the I/O loop is unbalanced,' citing paragraph 47 of Day

and stating 'proper allocation of resource requires detecting when unbalancing happens.' Paragraph 47 of Day does not discuss balance of resources or unbalancing. In fact, neither of the words 'balance' or 'unbalance' exists anywhere in Day. Paragraph 47 of Day discusses the sharing of processors in a pool among logical partitions. This has nothing to do with detecting when the I/O loop is unbalanced, as recited in claim 23. Nowhere does Day teach an I/O loop. As a result, it is impossible for Day to teach detecting when the I/O loop is unbalanced as recited in claim 23. In the Response to Arguments section of the pending office action, the examiner states: **Day clearly discloses the concept of balancing of resources, by putting resources into a pool, and resources in the pool can be divided to plurality of partitions in allocation units in a balancing manner (Day's paragraphs 44, 47 and 48). This statement by the examiner is a complete and total twisting of Day beyond it's reasonable bounds. As stated above, none of the words 'balance', 'balancing', 'unbalance' or 'unbalancing' exists in Day. Thus, the examiner's position that Day somehow teaches balancing of resources and dividing resources in the pool 'in a balancing manner' is a clear fabrication by the examiner that is not supported by Day.** Assigning resources to a pool so the resources may be shared as taught in Day has absolutely nothing to do with '(1) detecting when the I/O loop is unbalanced' as recited in claim 23. For this reason alone, the examiner's rejection of claim 23 under 35 U.S.C.§ 103(a) is in error. In the rejection, the examiner reads switching an I/O resource from the current partition to another partition in Tarui on (5) rebalancing the I/O loop by allocating at least one I/O resource in the I/O loop from a

first logical partition to a second logical partition. While Tarui does disclose switching an I/O resource from the current partition to another partition, Tarui has no teaching of an I/O loop, and therefore cannot teach at least one resource in the I/O loop. Furthermore, Tarui does not teach or suggest rebalancing anything, much less rebalancing an I/O loop. The examiner's rejection effective reads the limitation of I/O loop out of the claim. For this reason alone, the examiner's rejection of claim 23 under 35 U.S.C. §103(a) is in error. The examiner's rejection equates the pool of resources in Day to an I/O loop in claim 23, without any support from the teachings of Day. The pool of resources in Day is simply that: a pool of resources. To state this somehow reads on an I/O loop is a stretch of Day way beyond its reasonable bounds. Nowhere does Day teach or suggest anything that can be reasonably read on the I/O loop in claim 23. For this reason alone, the examiner's rejection of claim 23 under 35 U.S.C. § 103(a) is in error."

In response, the partition manager can dynamically reconfiguring resources among logical partitions, see paragraphs 7 and 41 and 26 of Day. Day further teaches rebalancing a pool of resources among logical partitions, paragraphs 44, 47 and 48 as follows:

First, Day clearly discloses the concept of balancing of resources, by putting resources into a pool, and resources in the pool can be divided to plurality of partitions in allocation units in a balancing manner. For example, assuming there are three partitions in a pool of resources, each is allocated 33% of resources, and the resources are assigned/allocated to partitions in a balanced manner, which means the logic must

attempt to rebalancing resources assigned to certain partitions (paragraph 47, " However, this does not mean that one of the processors in pool 315 will execute roughly half time on behalf of tasks in partition 301. Work from any one partition assigned to a pool is distributed among the processors in the pool, and it can be **expected that on the average each** of the five processors in pool 315 will devote about 10% of its capacity to executing on behalf of tasks from partition 301"). In other words, the rebalance of resources is evident by attempting such that **on the average** the allocating of resources to certain partitions reaches their goals.

In an embodiment, Day discloses using processors as the resources being assigned/allocated. Additionally, Day discloses the resources can be any kind of resources including I/O resources system (processors, I/O resources, paragraph 37). Therefore, it can be seen that Day teaching of the above balancing of resources can be applied equally to any other type of resources such as I/O resources.

Appellant further argues, " In rejecting claim 23 the examiner admits Day and Tarui do not disclose the limitations relating to I/O loops and states: However, Kaneko discloses a storage subsystem with I/O resources that are arranged including I/O physical resources (Kaneko Fig. 2:11,12,13,14) and wherein the physical I/O resources (Fig 2, 211 to 214, 221 to 224, 231 to 234 etc array of disks and including Fig 2 11 to 14) are organized into I/O loops (**Examiner note: the I/O loop can be interpreted as a group of I/O resources, and the I/O resources in the group/loop can be assigned and make [sic] available to different users/partitions (Kaneko's paragraph 31).** The examiner's assumptions above are in error. The examiner

assumes that elements 11-14 of FIG. 2 of Kaneko show I/O loops 211-214, 221-224, etc. In both the rejection and in the Response to Arguments section, the examiner states 'the I/O loop can be interpreted as a group of I/O resources, and the I/O resources in the group/loop can be assigned and made available to different users/partitions.' Thus, with the wave of a hand, the examiner completely dismisses the limitation "I/O loop" in claim 23, even though it is recited ***seven times***. This shows the examiner has not done a proper job of examining the claims in light of the cited art. Appellant forcefully asserts a group of resources as taught in Kaneko does not read on an I/O loop in claim 23. Nowhere does Kaneko teach, suggest, or show I/O loops as recited in claim 23."

Further, Appellant argues that the "I/O loop" is recited seven times in the claim and that Examiner's interpretation of the "I/O loop" is in error. However, Appellant fails to set forth the deliberate definition of "I/O loop". Appellant fails to set forth the differences between Examiner's interpretation of "I/O loop" and Appellant's deliberate definition of "I/O loop". **No where in the specification that the "I/O loop" is deliberately defined.** Therefore, Appellant's argument is merely statements of alleged distinctions between the present invention and the prior arts teachings, rather than actual arguments with respect to the claimed subject matter and the prior arts teaching. As such, these arguments are found to be not persuasive.

Appellant further argues, " Nowhere do ANY of the cited references have ANYTHING to do with rebalancing an I/O loop. Nowhere does Kaneko teach or suggest rebalancing an I/O loop with the steps recited in claim 23. The examiner's

attempt to read Kaneko on claim 23 is akin to attempting to pound a square peg into a round hole: it just doesn't fit. The addition of a disk resource in Kaneko has nothing to do with detecting when an I/O loop is unbalanced, and taking the corrective action steps in claim 23 to rebalance the I/O loop. This is one of the most egregious cases of hindsight reconstruction appellant's attorney has ever seen in his nearly two decades of practice. While NONE of the cited references have ANYTHING to do with rebalancing an I/O loop, the examiner still attempts to pound the square peg into a round hole. It is immediately clear to even the casual observer that one of ordinary skill in the art would not be motivated to combine Day, Tarui and Kaneko as suggested by the examiner to arrive at all of the limitations in claim 23 without the use of appellant's claim as a template for piecing together the references. Because the examiner clearly used hindsight reconstruction in combining Day, Tarui and Kaneko, the examiner's rejection of claim 23 is in error. For the many reasons given above, claim 23 is allowable over the combination of Day, Tarui, and Kaneko, and appellant respectfully requests the examiner's rejection of claim 23 under 35 U.S.C. § 103(a) be reversed."

In response, Examiner has responded to Appellant's arguments in above paragraphs, and has found Appellant's arguments are not persuasive.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/ Duc T. Doan/

Duc T. Doan

Examiner, Art Unit 2188

Conferees:

/Hyung S. Sough/
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